
A New Species of *Parahancornia* Ducke
(Apocynaceae: Plumerioideae: Carisseae)
with Comments on the Genus

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In early 1944 there appeared a revision of the apocynaceous genera *Couma* and *Parahancornia* (Monachino, 1943), being part of a series of papers by the author dealing with the taxonomic study of those laticiferous plants of this family with potential as sources of chicle for the manufacture of chewing gum. These taxonomic studies, carried out with support from the Chicle Development Company, were based in large part on the then-recent collections made by B. A. Krukoff, Ricardo de Lemos Fróes, and others. In his revision, Monachino succinctly pointed out the differences that separate *Parahancornia* from *Couma*. The most important and easily observable characters that distinguish *Parahancornia* from *Couma* are employed in the following key:

Leaves in whorls of 3-4(-5); inflorescences axillary (sometimes developing simultaneously with the terminal vegetative shoot); calyx 5-parted *Couma*
Leaves opposite; inflorescences terminal; calyx usually 4-parted *Parahancornia*

In the revision by Monachino, the necessary transfers from *Couma* to *Parahancornia* were made, and he further described three new species in the latter genus including *P. negroensis*. Based on the present author's field experience in the Vaupés of eastern Colombia, combined with the study of specimens in various herbaria, including those collections actually seen by Monachino for his study, it is clear that Monachino included specimens of two different yet superficially similar species under the name *P. negroensis*; some of these differences between the type and six paratype collections were even noted by Monachino in the species protologue. Because of this conclusion, a new species in the genus is here proposed.

***Parahancornia surrogata* Zarucchi, sp. nov.**

TYPE: Colombia. Vaupés: Mitú and vicinity, Río Paraná-Pichuna, savanna at major rapids, 18 July 1979 (fl, fr), James L. Zarucchi 2493 (holotype, COL-211365; isotypes, GH, K, MO, USF, WAG). Figures 1-5.

Arbor lactifera plerumque ad 10 m alta, *Parahancorniae negroensis* affinis et cum ea usque adhuc confusa; inflorescentiae terminales, adscendentes, 20-50(-90)-florae, floribus albidis; folia opposita, coriacea, nervis secundariis vulgo 7-11 regulariter arcuatis vix distinctis, et reticulo obscuro instructa.

Small tree usually less than 10 m, but reported to 20 m tall. Bark light gray with fine vertical and horizontal fissures. Wood cream-colored, soft, easily cut. Latex white, moderately thick, sticky, and very bitter tasting. Leaf-bearing branches terete up to 7 mm diam., youngest branches somewhat flattened, and the leaf-bearing branches becoming slightly swollen just below the nodes. Leaves opposite, ovate, 4-6 cm long, 1.5-2.5 cm wide, thick-coriaceous with 7-11 pairs of lateral veins; apices rounded to obtuse; bases cuneate becoming slightly decurrent on the petiole; leaf blade flat with margins entire; midrib slightly impressed above and prominent below, especially near base of the blade; lateral veins nearly obscure above and barely visible below, due mostly to their lighter color; petioles 2.5-5 mm long, shallowly canaliculate. Inflorescences terminal, cymose, lax, 20-50(-90)-flowered, 6-9 cm tall with axes white to cream-colored; common peduncle 3-14 mm long to first pair of axillary branches; bracts ovate to deltoid, ca. 1 mm long and 0.8-1 mm wide; pedicels 8-15(-30) mm long, thin, terete; bracteoles usually on distal third of pedicel. Flowers white, sweetly scented with mature buds attaining 15-20 mm long prior to anthesis. Calyx usually 4-parted and generally immediately subtended by several bracteoles; sepals 1-1.2 mm long and 0.8-1.1 mm wide, joined basally with the outer pair slightly larger than the inner ones, apices acute becoming ultimately rounded, margins finely ciliate. Corolla 5-parted with tube straight, 9-11 mm long, slightly dilated at the base and with a conspicuously dilated zone at the point of insertion of the stamens ca. 6 mm from the base, and the distal half of the tube becoming thickened leaving a small-diametered entrance into the flower; lobes oblong, 6-7 mm long and 2 mm wide, the outside becoming densely very short-pubescent basally and extending along distal part of the corolla tube. Stamens 5, with the fila-

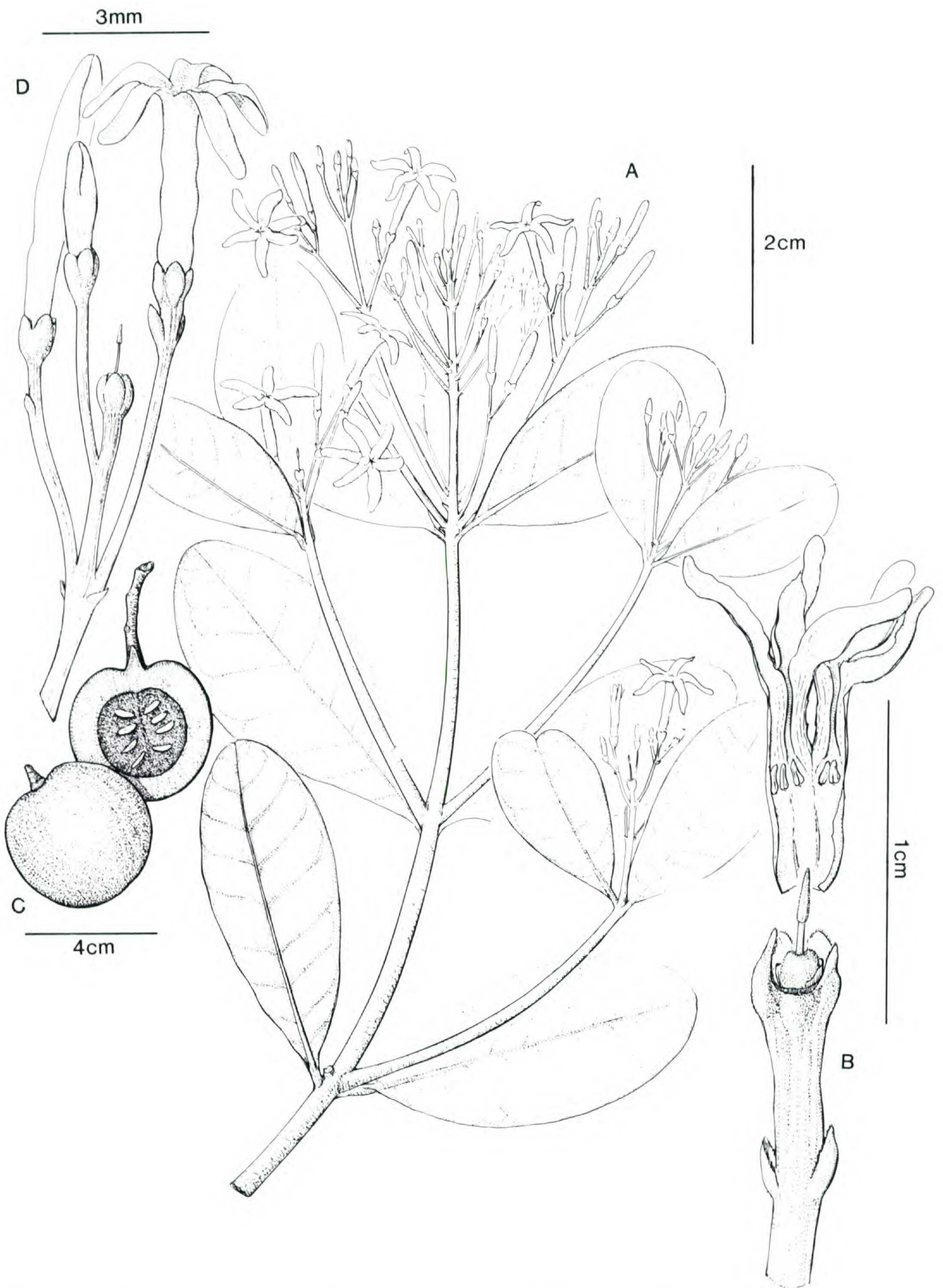


Figure 1. *Parahancornia surrogata* Zarucchi. —A. Habit. —B. Flower. —C. Fruit in cross section showing seeds embedded in pulp. —D. Portion of inflorescence showing flower buds and open corollas. (A, C, D from Zarucchi 2493; B from Zarucchi 2462.)

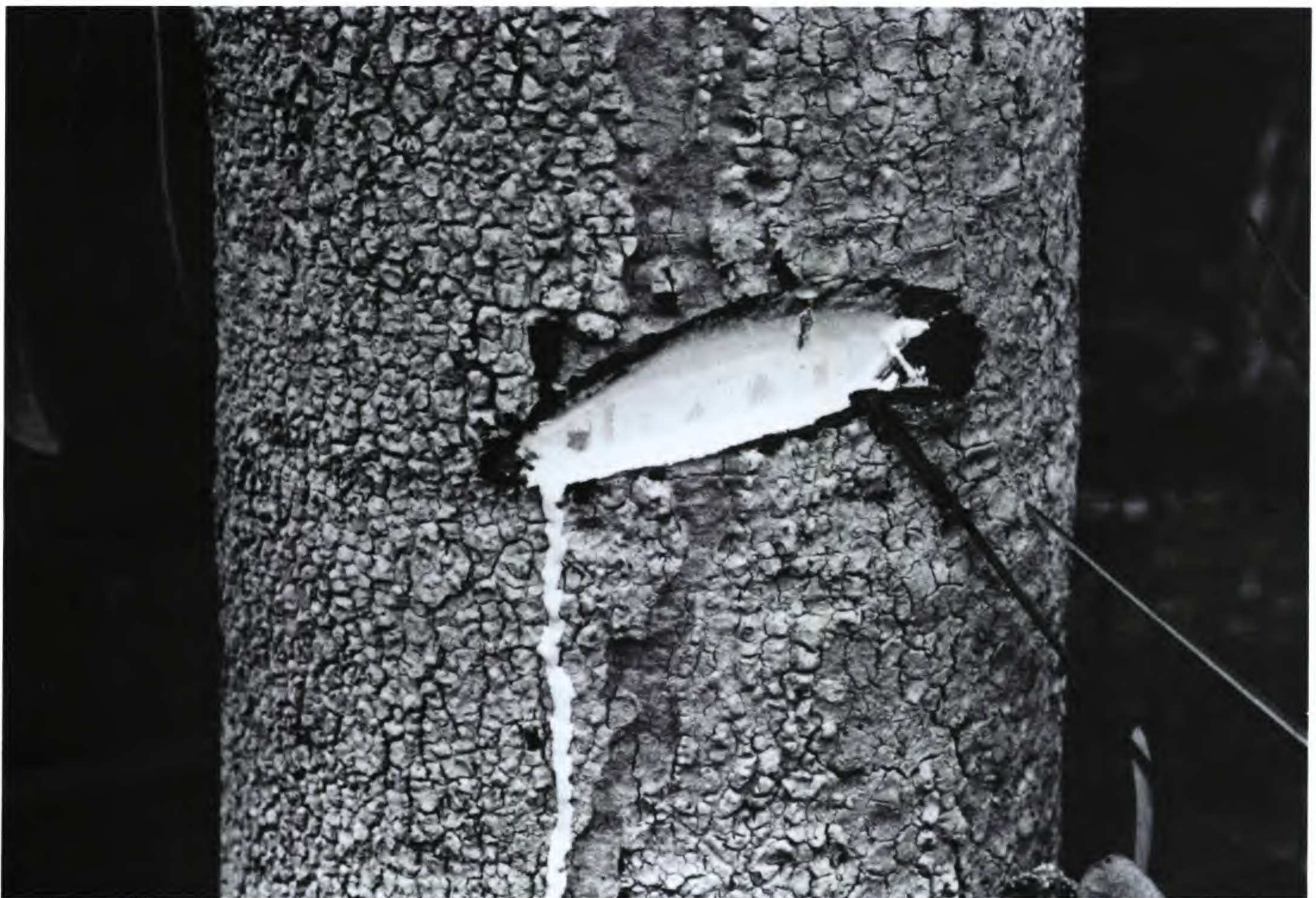


Figure 2. Trunk with slash exuding white latex of *Parahancornia surrogata* Zarucchi (Zarucchi 2494).

ments adnate to the corolla tube; anthers long-ovate, 1.4–1.6 mm long, opening by longitudinal slits; pollen granular; ovary conical-ovoid, 0.6–0.8 mm long, pubescent; style thin, terete, 2.5–3 mm long surmounted by a gently tapering conical clavuncle or stigmatic head 0.7–0.8 mm long and 0.15–0.2 mm diam. with a slightly swollen ring of tissue basally and with two distal, divergent stigmatic lobes ca. 0.2 mm long. Fruit a berry, globose, 4–6(–8) cm diam., 12–20(–30)-seeded, becoming black when mature; pericarp 7–9 mm thick, somewhat leathery; when mature the pulp surrounding the seeds becomes sweet and edible. Seeds plano-convex, 8–10 mm long, 4–5 mm wide, 2–2.5 mm thick; testa smooth. Embryo ca. $\frac{2}{3}$ length of seed, with cotyledons ovate, thin, 3–4 mm long and 2–3 mm wide; radicle straight, terete, 2–2.5 mm long.

Common names: Pendare, Juansoco de la Sabana, and mi-mi-WAHO-ka-ki (Kubeo language). The epithet used for this species refers to the former treatment of specimens of this species under the name *Parahancornia negroensis*.

Key to distinguish *Parahancornia surrogata* from *P. negroensis*:

Inflorescences with 20 or more flowers; leaves with 7–11 pairs of secondary veins that are bare-

ly visible on the lower surface, tertiary venation not apparent *P. surrogata*
Inflorescences with fewer than 10 flowers; leaves with 10–15 pairs of secondary veins that are prominently raised on the lower surface with intersecondaries and tertiary venation easily discernable *P. negroensis*

Additional specimens of Parahancornia surrogata Zarucchi (an asterisk following a collection number denotes a paratype collection of *P. negroensis* Monach.): BRAZIL. AMAZONAS: Rio Uaupés, Luis Lira, 12 July 1940 (st), *Adams 50** (US); Fóz do Içana, caatinga baixa, 17 May 1948 (fr), *Black 48-2721* (MO, RB); basin of Rio Negro, Munic. São Gabriel, Ca-te-Espera, 17 Nov. 1941 (young fr), *Fróes 376a** (F, G, GH, NY, P, UC, US, WIS), *377** (G, NY, US), 18 Nov. 1941 (fr), *Fróes 379** (G, NY, US); basin of Rio Negro, Santa Ana on Rio Içana, 18 Dec. 1941 (st), *Fróes 438** (G, NY, US), *439** (G, NY, US); 18 Nov. 1945 (fr), *Fróes 21415* (F, IAN, K, NY, RB, US); Rio Içana, praia dos Patos, 27 Mar. 1952 (fr), *Fróes 28064* (IAN, NY, Z); Rio Japurá, Q.SA-19-XB, 67°11'W–0°05'S, 18 Apr. 1975 (fr), *Nascimento et al. 153* (IAN, MG, Z); Cucuí, 29 Apr. 1975 (fr), *Nascimento et al. 240* (IAN, Z); Boca do Rio Uaupés, Feb. 1959 (st), *Pires et al. 7595* (IAN); Iauareté, margem do Rio Uaupés, 67°10'W, 1°19'N, Q.NA-19-YB, 4 June 1975 (st), *Ribeiro 1052* (IAN, MG); alto Rio Negro, Karacua, Feb. 1959 (st), *Rodrigues 1121* (INPA). COLOMBIA. AMAZONAS: Río Caquetá, Araracuara, Sabana de la Angostura, alt. 400 m, 21 Dec. 1951 (fr), *García-Barriga & Schultes 14175A* (COL, GH, NY, US); Río Caquetá, Araracuara, 5 Sep. 1959 (young fr), *Maguire*



Figure 3. Inflorescence and flowers of *Parahancornia surrogata* Zarucchi (Zarucchi 2462).



Figure 4. Pendulous fruits of *Parahancornia surrogata* Zarucchi (Zarucchi 1212).

et al. 44108 (NY). GUAINÍA: Río Inirida, Matraca, no date (st), *Crosse* 12888/3 (US); ca. 0.5 km N of Boca de Casiquiare (where Ríos Negro, Guainía & Casiquiare join), S side of caño, 1°57'N, 67°07'W, alt. 120 m, 5 Feb. 1980 (fl buds, fr), *Liesner & Clarke* 9095 (MO); Río Negro, at confluence of Ríos Guainía and Casiquiare, Caño Ducuruapo (Igarapé Rana), 13–17 Dec. 1947 (fr), *Schultes & López* 9397 (IAN, MO); Río Guainía basin, Río Naquieni, vicinity of Cerro Monachí, June 1948 (fr), *Schultes & López* 10109 (GH, NY). VAUPÉS: Río Papurí, vicinity of Santa Teresita, 15 Aug. 1943 (st), *Allen* 3066 (COL, MO); Río Cuduyarí, "Yapobodá," 23 Jan. 1944 (fr), *Allen* 3260 (G, MO); Río Kuduyarí, Sabana con arenisca de Yapobodá, alt. ca. 350–400 m, 25 June 1958 (fl), *García-Barriga et al.* 15898 (COL); Alto Río Papurí, sabana en el varador de maloca de Candido a Acaricuara, 5 Jan. 1977 (fr), *Patmore & Dufour* 14 (ECON); Alto Río Papurí, catanga entre el Río Papurí y Caño Yapú, 5 May 1977 (fr), *Patmore & Dufour* 109 (ECON, K); Río Vaupés, Cerro Circasia, Mar. 1944 (fr), *Schultes* 5859A (COL, MO); Río Piraparaná (tributary of Río Apaporis), Cerro E-ree-eé-kö-mee-ö-kee, 18 Sep. 1952 (fr), *Schultes & Cabrera* 17534 (BM, GH, MO, US); Río Kubiyú (tributary of Río Vaupés), Cerro Kañendá, savannas about 15 mi. upstream from mouth, ca. 1°0'N, 70°15'W, alt. ca. 800–900 ft., 10 Nov. 1952 (fr), *Schultes & Cabrera* 18368 (GH, MO, US); Río Vaupés, Circasia, ca. 0°45'N, 70°30'W, alt. ca. 800 ft., Nov. 1951 (fl buds, young fr), *Schultes & Cabrera* 19683 (GH, MO, NY, UC, US); Río Paraná Pichuna (tributary of Río Vaupés), ca. 1°10'N, 70°30'W, alt. ca. 700 ft., June 1953 (fl), *Schultes & Cabrera* 19941 (MO, US); Río Kuduyarí, savanna of Yapobodá, 16 Aug. 1960 (st), *Schultes* 22616 (ECON); Mitú and vicinity, lower Río Kubiyú, sandstone savanna, 15 Apr. 1975 (fr), *Zarucchi* 1212 (COL, ECON, US); 27 Apr. 1975 (st), *Zarucchi* 1287 (COL, GH, MO); 13 July 1979 (fl, fr), *Zarucchi* 2456 (COL, GH, K, MO); 14 July 1979 (fl), *Zarucchi* 2462 (COL, GH, K), 2464 (COL, GH, K, MO), 2465 (COL, GH, K, MO), 2466 (COL, GH, K, MO); 16 July 1979 (fl), *Zarucchi* 2484 (COL, GH, K, MO); 30 June 1976 (fl), *Zarucchi & Balick* 1788 (COL, ECON, GH, K, MO); Mitú and vicinity, Río Paraná–Pichuna, sandstone savanna at major rapids, 2 July 1975 (fr), *Zarucchi* 1376 (COL, GH, MO); 18 July 1979 (fl fr), *Zarucchi* 2494 (COL, GH, MO). VENEZUELA. AMAZONAS: Depto. Casiquiare, alrededores de Yavita (Río Temi) y cerca de la carretera Yavita–Pimichín hasta el km 5 hacia Pimichín, alt. 125–140 m, 6–19 July 1969 (fl), *Bunting et al.* 3885 (U); Depto. Atabapo, cerca del Caño Yagua, en el piedemonte oeste del Cerro Cucurital, al nor-este del Cerro Yapacana, 3°45'N, 66°32'W, alt. ca. 125 m, 27 May 1981 (fr), *Guanchez* 1278 (MO); Depto. Río Negro, sobre altiplanicie en la Serranía del Vinilla (aprox. 20 km SW de Mavaca) hacia el borde SW de la meseta, 2°20'N, 65°22'W, alt. ca. 760 m, 13 June 1981 (fl), *Huber* 6170 (MO); 12 km NE of San Carlos de Río Negro, ca. 8 km N of the road, 1°57'N, 67°03'W, elev. 120 m, 22 Sep. 1983 (st), *Kapos & Tanner* 136 (MO); Río Guainía, sabanita 1 km E of Maroa, alt. 125 m, 16 Apr. 1953 (fl), *Maguire & Wurdack* 35677 (MO, NY, US); Depto. Río Negro, vecinidades y al N del Cerro Vinilla, 2°31'N, 65°23'W, ca. 30 km al SSW de Ocamo, alt. 440–600 m, 1–2 Mar. 1984 (fl), *Steyermark et al.* 130389 (MO, VEN).

Common names. Brazil: Cumá (*Adams* 50), Cumáí (*Rodrigues* 1121); Coumahy (*Fróes* 376a, 377,

378), Coumahy da caatinga (*Fróes* 438, 439), Sôrva (*Fróes* 376a, 377, 378), Sôrva pequena (*Adams* 50). Colombia: da-WAHO-ka-ki (Kubeo language; *Zarucchi* 2462, 2464–2466); Di Juwj-wak-so-guh (Tucano language; *Allen* 3066); Juanchoco (*Zarucchi* 1212, 1287, 1376); Juansoco de la Sabana (*Zarucchi* 2462, 2464–2466, 2484, 2493–2494); Juansoko de la sabana (*Patmore & Dufour* 14); mi-mi-WAHO-ka-ki (Kubeo language; *Zarucchi* 2456, 2484, 2493–2494); Na (Tatuyo language; *Patmore & Dufour* 14, 109); Pendare (*Zarucchi* 2462, 2464–2466, 2484, 2493–2494); ran`-han (Taiwano language; *Schultes & Cabrera* 17534). Venezuela: Pendari (*Maguire & Wurdack* 35677).

Additional specimens of Parahancornia negroensis Monach.: BRAZIL. AMAZONAS: Igapó do Rio Negro, boca do Rio Branco, 2 July 1976 (fr), *L. Coêlho* 539 (INPA, MG); Rio Negro, Santa Isabel, loco Quatiá, ad ripas, 8 Dec. 1936 (fl), *Ducke* RB 30114 (G, INPA, P, U, US); basin of Rio Negro, Mun. São Gabriel, Rio Uenuichi, Matosinho, 21 Mar. 1942 (fl, fr), *Fróes* 800 (holotype, NY; isotypes, F, G, GH, K, MO, NY, P, UC, US); 18 May 1947 (fl, fr), *Fróes* 22346 (IAN, NY, RB, U); Rio Negro, São Felipe, Igarapé Tourrí, 27 Sep. 1952 (fl, fr), *Fróes* 28774 (A, COL, IAN, NY). VENEZUELA. AMAZONAS: Depto. Río Negro, Río Pasimoni, between its mouth and its junction with the Río Baria and the Río Yatua, 1°53'–1°27'N, 66°35'–66°32'W, elev. 80 m, 23–25 July 1984 (fr), *Davidse* 27759 (MO, US, VEN n.v.); Río Casiquiare, Jan.–Feb. 1969 (fl), *Fariñas et al.* 682 (MO, NY, VEN); Caño de Javita, June 1854 (fl), *Spruce* 3711 (K); Río Temi, Yavita, alt. 280 m, 21 Jan. 1942 (young fr), *Ll. Williams* 13865 (F, US); Río Guainía, Caño de San Miguel, alt. 127 m, 23 Mar. 1942 (fl, fr), *Ll. Williams* 14850 (F, MO, US); en la isla de Trapichote, Delta del [Río] Ventuari, alt. 125 m, 21 Apr. 1942 (fr), *Ll. Williams* 14994 (F, G, MICH, MO, RB, US); along Caño San Miguel just above Limoncito (15 km from Río Guainía), alt. 100–140 m, 28 June 1959 (fl), *Wurdack & Adderley* 43225 (MAD, NY, US, VEN).

Common names. Brazil: Molongó (*Ducke* RB 30114, *Fróes* 800). Venezuela: Palo de Boya (*Ll. Williams* 14850, 14994); Pendare rebalsera (*Ll. Williams* 13865).

Discussion

In his description of *Parahancornia negroensis*, Monachino cited a total of seven collections from the northwestern Amazon of Brazil. The citation of these collections (*Adams* 50, *Fróes* 376a, 377, 379, 438, 439, 800 [type]) was followed by the following paragraph: "The type of this species differs slightly from the other specimens cited in that the leaves are less coriaceous, the secondaries clearly visible (up to 15 pairs), connected at the leaf-margins, the tertiaries sometimes apparent. The style is very short (flowers parsitized), the stigma sharply conic." These characters, along with several concerning the inflorescence, including the much greater number of



Figure 5. Habitat and habit of *Parahancornia surrogata* Zarucchi in Colombian Vaupés (individual at center of picture)—population from which Zarucchi 1212 was collected.

flowers per inflorescence, distinguish *P. surrogata* from *P. negroensis*.

Distribution and Ecology

The distribution and ecology of *Parahancornia surrogata* are very similar to that for *Molongum lucidum* (HBK) Zarucchi (Zarucchi, 1987) in that the species is found in Brazil, Colombia, and Venezuela at elevations generally under 400 m (see Fig. 6). Both of these species of Apocynaceae inhabit the lowland quartzitic sandstone savanna formations that are scattered throughout northwestern Amazonia, existing in sandy soils containing little organic matter. Individuals are usually found along water courses in the open savanna, in the bordering gallery forest, or sometimes in the adjacent forest along streams with a generally open canopy. The westernmost gatherings for both of these apocynaceous species is near Araracuara on the Río Caquetá, Amazonas, Colombia.

Conservation status

Due to its widespread geographic distribution in habitats not conducive to agriculture or other destructive human activities, it can be assumed that *Parahancornia surrogata* is not threatened.

Recognized species of *Parahancornia*

Parahancornia Ducke, Arch. Jard. Bot. Rio de Janeiro 3: 242. 1922 (as “Parahancornea,” corrected in “Errata et Corrigenda” on unnumbered page following 272). TYPE SPECIES: *Parahancornia amapa* (Huber) Ducke. Based on *Hancornia amapa* Huber, Bol. Mus. Paraense Hist. Nat. 3: 444–445. 1902. [= *Parahancornia fasciculata* (Poiret) Benoist.]

Parahancornia amara (Markgraf) Monach., Lloydia 6(4): 243. 1943 [1944]. *Couma amara* Markgraf, Notizbl. Bot. Gart. Berlin-Dahlem 11: 338. 1932. TYPE: Brazil, Amazonas: region of Manaus, Ducke RB 22424 (holotype, B (lost)). [This species may ultimately prove to be best treated as a synonym of *Parahancornia oblonga* (Benth. ex Muell. Arg.) Monach.]

Parahancornia fasciculata (Poiret) Benoist, Arch. Bot. Mém. 5: 274. 1933. *Tabernaemontana fasciculata* Poiret, Encycl. 7: 531. 1806. *Thyrsanthus fasciculatus* (Poiret) Miers, Apocyn. S. Amer. 100. 1878; *Couma fasciculata* (Poiret) Benoist, Arch. Bot. Mém. 5: 253. 1933; *Macoubea fasciculata* (Poiret) Lemée, Fl. Guy-

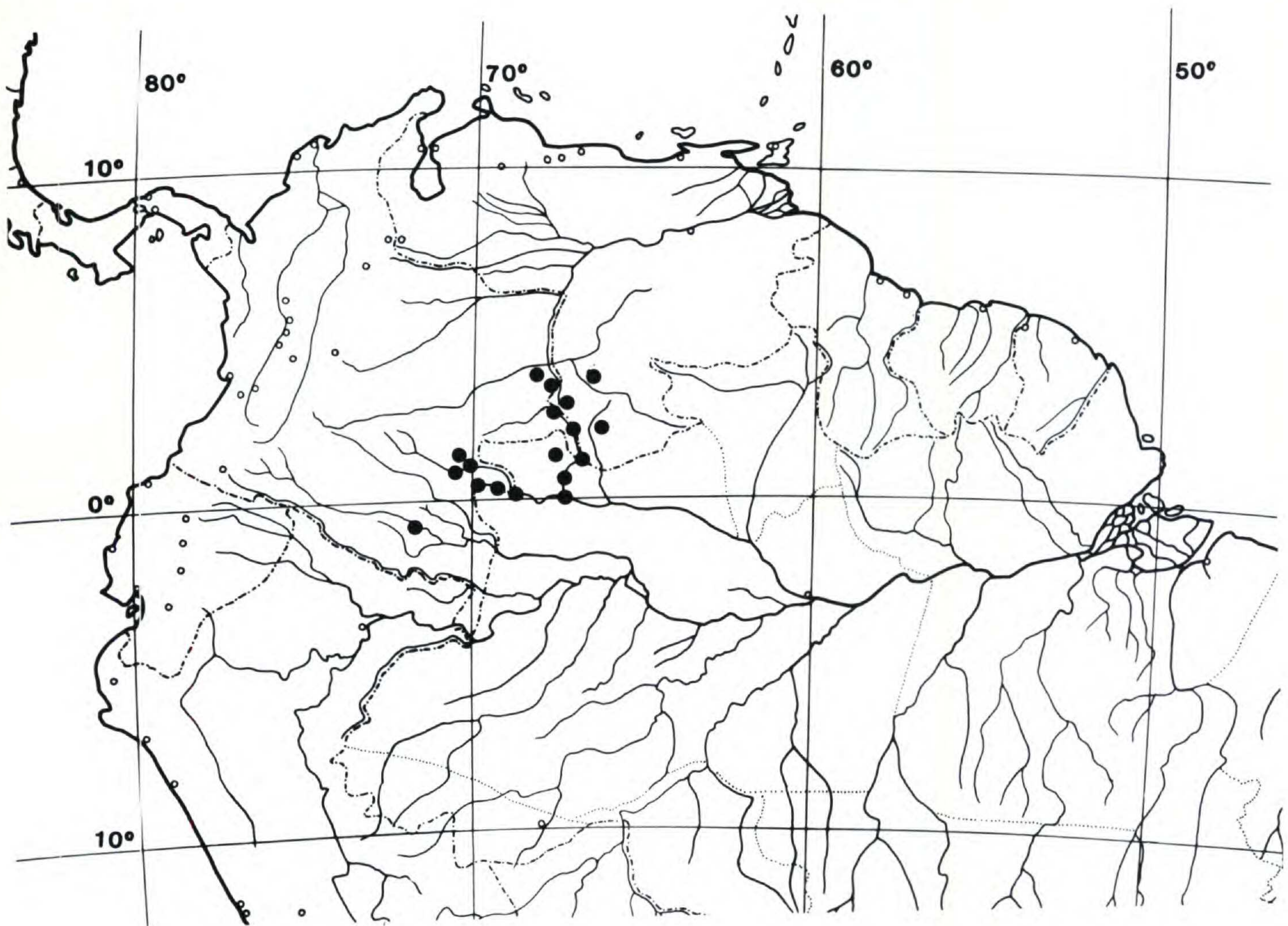


Figure 6. Known distribution of *Parahancornia surrogata* Zarucchi.

ane Fr. 3: 298. 1954. TYPE: French Guiana, *Collector unknown s.n.* (holotype, P-LAM). Central Amazonas, Pará, & Amapá, Brazil, the Guianas, and eastern Venezuela.

Malouetia lactiflua Miers, Apocyn. S. Amer. 88. 1878, syn. nov. TYPE: Guyana, *Schomburgk 168* (holotype, BM).

Hancornia amapa Huber, Bol. Mus. Paraense Hist. Nat. 3: 444-445. 1902. TYPE: Brazil, Pará, *Huber MG 1866* (holotype, MG).

Parahancornia amapa (Huber) Ducke, Arch. Jard. Bot. Rio de Janeiro 3: 242 as "*Parahancornea*," corrected on page following 272. 1922. [Benoist (1933) was the first person to equate *Tabernaemontana fasciculata* with *Parahancornia amapa*, although at first he did not recognize *Parahancornia* as meriting generic status and made the combination under *Couma*.]

Parahancornia krukovii Monach., Lloydia 6(4): 243. 1943 [1944]. TYPE: Brazil. Amazonas: *Krukoff 7189* (holotype, NY). Southwestern Amazonas, Brazil.

Parahancornia negroensis Monach., Lloydia 6(4): 244. 1943 [1944], pro parte. TYPE: Brazil. Amazonas: *Fróes 800* (holotype, NY). Eastern Colombia, southern Venezuela, and northwestern Amazonas, Brazil.

Parahancornia oblonga (Benth. ex Müll. Arg.) Monach., Lloydia 6(4): 243. 1943 [1944]. *Couma oblonga* Benth. ex Müll. Arg., Linnaea 30: 390. 1860. TYPE: border of Venezuela (Amazonas)/Colombia (Vichada): *Spruce 3619* (lectotype, selected here, BR). Eastern Colombia, southern Venezuela, northwestern Amazonas, Brazil.

Parahancornia peruviana Monach., Lloydia 6(4): 242. 1943 [1944]. TYPE: Peru. Loreto: *Klug 2979* (holotype, NY). Amazonian Peru.

Parahancornia surrogata Zarucchi [described herein]. TYPE: Colombia. Vaupés: *Zarucchi 2493* (holotype, COL). Eastern Colombia, southern Venezuela, and northwestern Amazonas, Brazil.

Excluded species

Parahancornia tabernaemontana Woodson, Bull. Torrey Bot. Club 75(5): 556. 1948. TYPE: Surinam, *Maguire 27919* (holotype, MO), syn. nov. = *Macoubea guianensis* Aublet. [This synonym under *Macoubea* was not accounted for in the publication by Allorge (1985).]

I thank curators and directors of numerous herbaria who have made specimens available to me for study. Support for fieldwork in Colombia while a graduate student of Richard Evans Schultes at the Harvard Botanical Museum was provided by the Atkins Garden and Fernald Funds of Harvard University. Logistical assistance in Colombia was graciously provided by staff members at the Instituto de Ciencias Naturales of the Universidad Nacional in Bogotá (COL). Special thanks go to Bruno Manara for correcting the Latin diagnosis, to John Myers for providing the excellent line drawing, and to Gerrit Davidse and anonymous reviewers for useful suggestions.

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